

Criterion A: One World

This objective refers to enabling students to understand the interdependence between science and society. Students should be aware of the global dimension of science, as a universal activity with consequences for our lives and subject to social, economic, political, environmental, cultural and ethical factors

Achievement Level	Descriptor
0	<ul style="list-style-type: none"> The student does not reach a standard described by any of the descriptors given below.
1-2	<ul style="list-style-type: none"> Give a few examples of science and scientific applications States some of the benefits or limitations of science and briefly discuss its effects on people, societies and the environment.
3-4	<ul style="list-style-type: none"> Give a basic account of causes, reasons and mechanisms in which science is applied and used to solve local and global problems Give some examples of science and scientific applications and attempts to evaluate some of their positive and/or negative effects on people, societies and the environment, taking notes of their implications Occasionally describe and explain how science and technology depend on each other for the development of knowledge and technological applications. Occasionally understand and comment that science is part of the world they live in by describing how science and its applications are affected and/or influenced by at least one of the following factors: social, economic, political, environmental, cultural, ethical factors.
5-6	<ul style="list-style-type: none"> Give a detail account of causes, reasons and mechanisms in which science is applied and used to solve local and global problems. Give examples of science and scientific applications and evaluate some of their positive and/or negative effects on people, societies and the environment, taking note of their implications. Describe and explain how science and technology depend on each other for the development of knowledge and technological applications. Understand and comment that science is part of the world they live in by describing how science and its applications are affected and/or influenced by social, economic, political, environmental, cultural, ethical factors.

Criterion B: Communication in Science

This objective refers to enabling students to develop their communication skills in science. Students should be able to understand scientific information, such as data, ideas, arguments and investigations, and communicate it using appropriate scientific language in a variety of communication modes and formats as appropriate

Achievement Level	Descriptor
0	<ul style="list-style-type: none"> The student does not reach a standard described by any of the descriptors given below.
1-2	<ul style="list-style-type: none"> Attempts to communicate using some of the scientific language relevant to the units of work covered. Attempts to provide some scientific information using limited modes of communication: oral, written, visual representation (formulae, graphs, tables, diagrams). Attempts to present some of the scientific information in given formats (such as laboratory reports, experimental accounts, explanations, essays, expositions, audio visual presentations) with little accuracy. Recognize occasionally the need for honesty when collecting and processing data information, and when acknowledging sources
3-4	<ul style="list-style-type: none"> Attempts to communicate using most of the scientific language relevant to the units of work covered. Provide scientific information using some modes of communication: oral, written, visual representation (formulae, graphs, tables, diagrams). Present some of the scientific information in an appropriate format (such as laboratory reports, experimental accounts, explanations, essays, expositions, audio-visual presentations) appropriate to the work covered, and acknowledge sources. Recognize the need of honesty when handling data and information, and acknowledging sources Use some information and communication technology applications (www, data loggers, databases, spreadsheets and/or software for plotting graphs) to access, process and communicate scientific information with guidance in unfamiliar situations.
5-6	<ul style="list-style-type: none"> Understand and apply scientific language relevant to the units of work covered. Provide scientific information using appropriate modes of communication: oral, written, visual representation (formulae, graphs, tables, diagrams) consistent with the level of complexity of the units of work covered. Present scientific information in formats (such as laboratory reports, experimental accounts, explanations, essays, expositions, audio-visual presentations) appropriate to the work covered, and acknowledge sources. Demonstrate honesty when handling data and information, acknowledging sources as appropriate. Use where appropriate information and communication technology applications

	(World Wide Web, data loggers, databases, spreadsheets and/or software for plotting graphs) to access, process and communicate scientific information.
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<p>Criterion C: Knowledge and understanding of science</p> <p>Students should acquire knowledge of scientific information taught throughout the subject. They should show their understanding of the main scientific ideas and concepts of science, by applying these to solve problems. Students should be aware that scientific models and theory may be modified in time.</p>	
Level of Achievement	Descriptor
0	<ul style="list-style-type: none"> ○ The student does not reach a standard described by any of the descriptors given.
1–2	<ul style="list-style-type: none"> ○ Student recall some of the scientific information relevant to the units of work covered and apply these to solve simple problems.
3–4	<ul style="list-style-type: none"> ○ Student recognizes and recall most of the scientific information relevant to the units of work covered. ○ Student explains scientific information to solve simple problems in familiar and, with guidance, in unfamiliar situations. ○ Student attempts to analyze and interpret simple scientific information by identifying basic components, relationships and patterns, both in experimental data and ideas to obtain relevant conclusions. ○ Student attempts to discuss, interpret and evaluate the credibility of scientific information from different sources (internet, newspaper articles, television, scientific texts and publications).
5–6	<ul style="list-style-type: none"> ○ Recognize and recall scientific information relevant to the units of work covered ○ Explain and apply scientific information to solve problems in familiar and, with guidance, in unfamiliar situations. ○ Analyze and interpret simple scientific information by identifying basic components, relationships and patterns, both in experimental data and ideas, to obtain relevant conclusions. ○ Discuss, interprets and evaluate credibility of scientific information from different sources (Internet, newspaper articles, television, scientific texts and publications).

Criterion D: Scientific Inquiry

This objective refers to enabling students to develop scientific inquiry skills to design and carry out scientific investigations. Students should be able to carry out a scientific investigation given a problem, a hypothesis and a suitable method. They should identify the variables that might affect the results of the experiment and attempt a way of controlling them, evaluate their method and communicate their investigation work in a lab report. Students are expected to carry out scientific investigations independently using lab materials and equipment adequately.

Level of Achievement	Descriptor
0	<ul style="list-style-type: none"> ○ The student does not reach a standard described by any of the descriptors given.
1–2	<ul style="list-style-type: none"> ○ The student attempts to recognize the problem or research question to be tested by a scientific investigation but this is generally inaccurate. ○ The student attempts to formulate a simple hypothesis but is not fully accurate. ○ The student attempts to designs with guidance scientific investigations but this is partially complete.
3–4	<ul style="list-style-type: none"> ○ Occasionally the student recognize, and attempts to articulate the problem or research question to be tested by a scientific investigation. ○ Occasionally the student formulates a simple hypothesis and attempts to explain it using their knowledge of sciences (“If I do this, then that will happen because ...”). ○ Occasionally the student designs scientific investigations that include variables and controls that are identified; identifies materials/equipment needed; describes a method to be followed; suggests the data to be collected but these is not fully developed. ○ The student briefly comments on the method and the accuracy and and/or precision of the results.
5–6	<ul style="list-style-type: none"> ○ Recognize and attempt to articulate the problem or research question to be tested by a scientific investigation. ○ Formulate a simple hypothesis and explain it using a logical reasoning and their knowledge of sciences (“If I do this, then that will happen because ...”). ○ Design scientific investigations that include variables and controls that are identified; identify materials/equipment needed; describe a method to be followed; suggest the data to be collected. ○ Comment, with orientation on the method and the accuracy and/or precision of the results.

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| | <ul style="list-style-type: none">○ Suggest improvements to the method. |
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Criterion E: Processing Data

Processing data refers to enabling students to organize and process data. Students should be able to organize and transform data by numerical calculations into diagrammatic form (tables, graphs and charts) and draw and explain appropriate conclusions.

Level of Achievement	Descriptor
0	<ul style="list-style-type: none"> ○ The student does not reach a standard described by any of the descriptors given.
1–2	<ul style="list-style-type: none"> ○ Attempts to collect and record data. ○ Attempts to organize data and present data. ○ Attempts to draw an obvious conclusion.
3–4	<ul style="list-style-type: none"> ○ Occasionally collect and record data using appropriate units of measurement. ○ Occasionally organize and transform data into numerical and diagrammatic forms, including mathematical calculations and visual representation (tables, graphs and charts). ○ Present data in limited formats using some appropriate communication modes (oral written and visual representation, and use of technologies) and conventions (units of measurement) ○ Attempts to analyze and interpret data by identifying trends, patterns and relationships based on the data. ○ Occasionally draw conclusions supported by explanations that are consistent with the analysis of the data
5–6	<ul style="list-style-type: none"> ○ Collect and record data using appropriate units of measurement ○ Organize and transform data into numerical and diagrammatic forms, including mathematical calculations and visual representation (tables, graphs and charts). ○ Present data in a variety of ways using appropriate communication modes (oral, written and visual representation, and use of technologies) and conventions (units of measurement) ○ Analyze and interpret data by identifying trends, patterns and relationships. ○ Draw conclusions supported by explanations that are consistent with the analysis of the data.

Criterion F: Attitudes in Science

Encouraging students' attitudes of safety, respect and collaboration. Students are expected to:

- Carry out scientific investigations using materials and techniques skillfully and safely and showing respect for the living and non-living environment carry out scientific investigations using materials and techniques skillfully and safely and showing respect for the living and non-living environment
- Work effectively as a member of a team, collaborating, acknowledging and respecting the views of others as well as ensuring a safe working environment.

Level of Achievement	Descriptor
0	<ul style="list-style-type: none"> ○ The student does not reach a standard described by any of the descriptors given.
1–2	<ul style="list-style-type: none"> ○ Require supervision when carrying out scientific investigations. ○ Generally needs reminders to work effectively as a member of a team.
3–4	<ul style="list-style-type: none"> ○ Carry out most scientific investigations, with guidance safely and skillfully using materials and techniques ○ Generally work effectively as members of a team, by being guided into collaborating, acknowledging and supporting others as well as ensuring in most occasions a safe working environment ○ In occasions show respect for themselves and others, and deal responsibly with the living and non-living environment.
5–6	<ul style="list-style-type: none"> ○ Carry out scientific investigations, with guidance safely and skillfully using materials and techniques ○ Work effectively as members of a team, by being guided into collaborating, acknowledging and supporting ○ Others as well as ensuring a safe working environment ○ Show respect for themselves and others, and deal responsibly with the living and non-living environment.